**Life of a Red Giant**

A Red Giant is in the M10^5 spectral class. This star is formed from a nebula of gas that eventually contracts together and a star is born. This process takes millions of years. A Red Giant starts off small but eventually will reach the main sequence phase where it will live most of its life very much like our own Sun. During the Main Sequence phase, the star will burn hydrogen which makes up 74% of the star. The star will burn hydrogen the whole time during this phase until it runs out of hydrogen. After this, the star will burn helium which makes up 25% of the star. When the star stars to burn all of its helium, it stars to expand rapidly into a huge Red Giant. As it gets bigger, the star cools down and the color radiates becomes red. Also as it becomes bigger, it gets brighter too. This star now becomes a Red Giant and is 100 times bigger than it was in the Main Sequence phase. The star keeps on getting bigger until it runs out of helium. At this point in its life the star sheds all of its layers into a planetary nebula. The only thing left over in all that gas is a white dwarf. The white dwarf is the size of Earth and the mass of the Sun. It is very bright and hot, radiating all the left over heat. After millions of years when all the heat is radiated off, it becomes a black dwarf and is very dark and basically a dead planet.